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3745-506-410

Statistically significant changes between background data and the ground water detection monitoring analytical results.

(A) Notification.

If there is a statistically significant change between background data and downgradient analytical results for a parameter in a ground water sample required to be chemically and statistically analyzed by rule 3745-506-400 of the Administrative Code, then an owner or operator shall submit written notification of the statistically significant change between background data and the analytical results to Ohio EPA and the approved board of health not later than seventy-five days after withdrawing a ground water sample from the ground water monitoring well that when analyzed demonstrated the statistically significant change. The notification shall indicate which wells and parameters have shown a statistically significant change from background data.

(B) Demonstration of a false positive.

If there is a statistically significant change between background data and downgradient analytical results for a parameter in a ground water sample required to be chemically and statistically analyzed by rule 3745-506-400 of the Administrative Code, the owner or operator may submit a false positive demonstration regarding the statistically significant change in accordance with paragraph (B)(1) or (B)(2) of this rule. If the false positive demonstration is successful, the facility may remain in the detection monitoring program.

(1) An owner or operator may demonstrate using the "1 of m" re-sampling method that a statistically significant change between background data and the analytical result was a false positive. Resampling shall be conducted in accordance with the resampling methods in the statistical analysis plan. A minimum of one of the resample results, or the number required by the statistical analysis plan, whichever is greater, shall be at or below the applicable statistical limit for the demonstration to be successful. A separate demonstration shall be made for each parameter exhibiting a statistically significant change from background. A report documenting this demonstration shall be submitted to Ohio EPA and the approved board of health not later than one hundred eighty days after withdrawal of the initial sample described in paragraph (A) of this rule.

[Comment: Pursuant to rule 3745-506-300 of the Administrative Code, the "1 of m" re-sampling method shall be documented within the statistical analysis plan.]

(2) An owner or operator may demonstrate that an alternate source, error, or natural variation caused the statistically significant change from background data. This false positive demonstration shall be in accordance with the following:

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(a) The demonstration shall be based on one or more of the following explanations:

(i) That a source other than a potential source of contamination at the facility caused the ground water contamination. This demonstration shall include at a minimum, the following:

(a) Where available, laboratory analysis results of leachate from the facility, and a comparison of the leachate results to ground water quality at the monitoring well where the statistically significant change from background occurred and other monitoring wells in the same significant zone of saturation or aquifer.

(b) A map showing location of possible sources, including estimated extent of alternate source contaminants.

(c) An analysis of ground water monitoring data demonstrating that the ground water contamination is not from potential sources of contamination at the facility. This demonstration shall include ground water quality time series plots showing all monitoring wells in the significant zone of saturation or aquifer system where the statistically significant change from background occurred, and where available, comparison of the facility ground water monitoring data to leachate data from the facility and Piper or stiff diagrams displaying the facility ground water data and potential alternate source data together.

(d) Where available, copies of any documentation of spills or storage or occurrence of materials that are being identified as the alternate source.

(e) Where available, soil sampling analytical data used to identify the alternate source.

(f) Where available, ground water quality data from other investigations related to the alternate source.

(g) A description of how the ground water monitoring program will be influenced by the ground water contamination from the alternate source.

(ii) That the statistically significant change between background data and the analytical results resulted from an error in one or a combination of the following:

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- (a) Sampling or reporting of sampling of the ground water monitoring wells. This demonstration shall include at a minimum, field notes and field data sheets completed during the sampling event for the affected ground water monitoring well and any field notes documenting problems encountered during construction of, development, maintenance or efforts to repair the ground water monitoring well.
- (b) Chemical analysis or reporting of chemical analysis of the ground water samples. This demonstration shall include at a minimum, a case narrative or signed letter from a representative of the lab specifying the error and how the error occurred and lab data sheets showing the relevant quality control data that documents the error.
- (c) Statistical analysis or reporting of statistical analysis of the chemical analytical data. This demonstration shall include a description of the statistical error causing the statistically significant increase and any changes to the statistical analysis plan that are needed to correct the error.
- (iii) The statistically significant change between background data and the analytical results is due to natural variation in ground water quality. This demonstration shall include at a minimum the following:

 - (a) Where available, laboratory analysis results of leachate from the facility, and a comparison of the leachate results to ground water quality at the monitoring well where the statistically significant change from background occurred and other monitoring wells in the same significant zone of saturation or aquifer.
 - (b) Ground water quality time series plots showing all monitoring wells in the significant zone of saturation or aquifer where the statistically significant change from background occurred.
 - (c) Where available, ground water quality data from other wells no more than one mile from the facility boundary that are screened in the same aquifer system where the statistically significant change from background occurred, including justification that the ground water quality data from the other wells is representative of ambient ground water quality and are not impacted by contamination.
- (b) A report documenting this demonstration shall be submitted to Ohio EPA and the approved board of health not later than one hundred twenty days after withdrawal of the initial sample described in paragraph (A) of this rule. If a false positive demonstration report is not received by Ohio EPA by the end of the one hundred twentieth day after withdrawal of the initial

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sample described in paragraph (A) of this rule, the false positive demonstration is unsuccessful.

- (c) If the director does not issue a letter to the owner or operator rejecting the false positive demonstration by the end of the sixtieth day after the date the false positive demonstration report was submitted to Ohio EPA, the false positive demonstration is successful. If the director issues a letter to the owner or operator rejecting the false positive demonstration not later than sixty days after the date the false positive demonstration report was received by Ohio EPA, the false positive demonstration is unsuccessful.

[Comment: If the owner or operator does not make a successful false positive demonstration in accordance with this rule for all parameters exhibiting a statistically significant change from background data at a downgradient ground water monitoring well, paragraph (A) of rule 3745-506-500 of the Administrative Code requires the owner or operator to enter the ground water assessment program, including submitting and implementing a ground water assessment plan not later than two hundred ten days after withdrawal of the initial sample described in paragraph (A) of this rule.]